STATE OF CALIFORNIA
Budget Change Proposal - Cover Sheet
DF-46 (REV 08/15)

Fiscal Year	Business Unit	Department	Priority No.
2016-17	3980	Office of Environmental Health Hazard Assessment	3

Budget Request Name	Program	Subprogram
3980-004-BCP-BR-2016-GB	3730	

Budget Request Description
Drinking Water: Statewide Indicators of Quality, Affordability, and Accessibility

Budget Request Summary
The Office of Environmental Health Hazard Assessment (OEHHA) requests $277,000 annually, including $100,000 per year in contracts, for two years, to be funded by reimbursement from the State Water Resources Control Board (SWRCB) to develop statewide metrics related to the adequacy of California's drinking water with respect to its quality, affordability, and accessibility. Under this proposal, OEHHA will develop indicators for each of these components of drinking water adequacy, quantify indicators with statewide data, share results, identify needs for improved data, and propose a mechanism to monitor progress over time. This activity will provide critical information to assist SWRCB in planning and prioritizing drinking water system improvements. Much of this work is expected to inform several of the concepts identified in statutory language under Assembly Bill (AB) 685 (Chapter 524, Statutes of 2012).

Requires Legislation	Code Section(s) to be Added/Amended/Repealed
☐ Yes ☒ No	

Does this BCP contain information technology (IT) components? ☐ Yes ☒ No *If yes, departmental Chief Information Officer must sign.*	Department CIO	Date

For IT requests, specify the date a Special Project Report (SPR) or Feasibility Study Report (FSR) was approved by the Department of Technology, or previously by the Department of Finance.

☐ FSR ☐ SPR Project No. Date:

If proposal affects another department, does other department concur with proposal? ☒ Yes ☐ No
Attach comments of affected department, signed and dated by the department director or designee.

Prepared By	Date	Reviewed By	Date
John Faust	~~09/17/2015~~ 1-5-16	Allan Hirsch	1-6-16 ~~09/17/2015~~
Department Director Lauren Zeise, Acting Director	Date 1/6/16 ~~9/17/2015~~	Agency Secretary Matthew Rodriquez	Date 1/6/16

Department of Finance Use Only

Additional Review: ☐ Capital Outlay ☐ ITCU ☐ FSCU ☐ OSAE ☐ CALSTARS ☐ Dept. of Technology

BCP Type: ☐ Policy ☐ Workload Budget per Government Code 13308.05

PPBA	Original Signed By: Ellen Moratti	Date submitted to the Legislature
		1/7/16

A. Budget Request Summary

The Office of Environmental Health Hazard Assessment (OEHHA) requests $277,000 annually, including $100,000 per year in contracts, for two years, funded by reimbursement from the State Water Resources Control Board (SWRCB) in 2016-17 and 2017-18. These resources will allow OEHHA to provide SWRCB with critical new statewide data and analysis related to the quality, affordability and accessibility of drinking water. Drinking water systems in California already face multiple stressors, many of which have been amplified by the extreme drought. There is an urgent need for readily available decision-support tools and information to help guide management of drinking water in the state. Statewide data sets that characterize these stressors through specific indicators that can be represented with maps will provide SWRCB with a tool that assists in departmental planning and can help to identify areas where additional resources may need to be secured and directed. The individual indicators will be developed in consultation with SWRCB so that they are well-suited to decision support. The indicators developed through this BCP will also inform several of the concepts identified in AB 685 (Chapter 524, Statutes of 2012) which establishes as state policy that every Californian has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.

OEHHA has already developed some statewide indicator data on drinking water quality as part of the California Communities Environmental Health Screening Tool (CalEnviroScreen). The activities in this BCP extend and deepen that work on drinking water to include additional stressors and types of water system vulnerabilities beyond the requirements of the current CalEnviroScreen program.

B. Background/History

Water systems[1] across California face many challenges with respect to the provision of drinking water. Surface and groundwater sources may contain naturally occurring and anthropogenic contaminants that require treatment. Source and finished water may contain multiple, persistent, or emerging contaminants. Needed improvements to aging or inadequate water system infrastructure to address contaminants may impose costs that many water systems, especially small ones, cannot cover. High and unaffordable water rates may be charged in systems that have less capacity to absorb operation costs. Some systems may be further challenged with changes in supply due to drought or groundwater depletion. Differences in the condition of the systems, the water they supply, and in their ability to address these different challenges, also raise implications for equity and environmental justice across communities, demographic groups, and socioeconomic strata.

AB 685 establishes as state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. Though enacted recently, there has not yet been a systematic effort to bring together statewide data to characterize the identified concepts for drinking water systems in California. Having this information readily accessible will allow policy-makers and regulators to look both at individual issues on a statewide basis as well as holistically at the state of drinking water across California by way of multiple measures that characterize drinking water adequacy with respect to quality, affordability, and accessibility.

OEHHA has already devoted some resources to understanding drinking water quality statewide as part of the CalEnviroScreen program, which seeks overall to identify communities across California that are burdened by multiple sources of pollution and vulnerabilities through 19 statewide indicators (http://www.oehha.ca.gov/ej/ces2.html). As part of that work, OEHHA created one indicator of drinking water quality that took into account the concentration of several types of contaminants in delivered water across the state. The work involved compiling datasets of drinking water system boundaries and joining that information to water quality data from the state's water quality monitoring database and other sources of data. The CalEnviroScreen work provides a jumping-off point for creating statewide information on water quality at the system level. However, because CalEnviroScreen requires analysis at the census tract scale, the work is not directly applicable to providing drinking water system-scale analysis and results. Also, CalEnviroScreen does not collect data on drinking water affordability and accessibility, which would be critical for the proposed project. Other information related to drinking water adequacy is ripe for compilation. For example, currently, water rate information is only collected on a limited basis, but is not assessed systematically for all water

[1] Here "water systems" refer to community water systems, that is, public water systems that serve at least 15 service connections used by yearlong residents or regularly serve at least 25 yearlong residents of the area served by the system.

systems in a way that readily supports decision making. The same is true for other potential statewide measures of drinking water adequacy.

C. State Level Considerations

SWRCB assumed regulatory responsibility for California drinking water in 2014. As discussed in the Background/History section, many water systems face myriad of infrastructure, water quality, and financing issues. The enactment of AB 685 in 2012 requires that all relevant state agencies, including SWRCB and the Department of Water Resources, shall consider the right of Californians to safe, clean, affordable and accessible drinking water when revising, adopting, or establishing policies, regulations, and grant criteria that are pertinent to drinking water. As yet, there is no structured framework to interpret the language in the statute. The state faces many challenges related to the provision of drinking water, many of which are exacerbated by the ongoing severe drought. This work will provide a framework, propose a set of suitable indicators and measures, and develop statewide analytic results that may be used to establish baseline conditions with respect to drinking water quality, affordability, and accessibility that are not currently available. These results do not create a new specific obligation for state agencies, but will provide data to support the prioritization of resources to regions and systems where the need is the greatest.

The work described in this BCP allows analysis that relates the condition of statewide water systems to demographic information which furthers environmental justice goals established in statute (Public Resources Code, sections 71110-71113). This includes requirements that CalEPA:

- Conduct its programs, policies, and activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.
- Improve research and data collection for programs within the Agency relating to the health of, and environment of, people of all races, cultures, and income levels, including minority populations and low-income populations of the state.

D. Justification

Drinking water is a critical resource for human health and livelihoods. Existing law establishes as state policy that the use of water for domestic purposes is the highest use of water. However, drinking water systems in California face multiple stressors. Among the most significant are the widespread presence of contaminants, limited capacity on the part of water systems, especially small ones, to meet changing demands and address emerging issues, and aging infrastructure that can compromise the supply of water. These stressors are amplified by the current severe drought and other long term consequences of factors such as climate change.

California government directs many resources to improve different aspects of the provision of drinking water so that it is safe and clean, affordable, and in adequate amounts. These include funding programs to correct water system deficiencies, increase technical, managerial, and financial capacity, support for small water systems, and enforcement actions against water systems that do not comply with regulations, among others. The work proposed in this BCP is directed at providing information as a decision-support tool to allow water policy-makers to make efficient uses of limited resources directed at the places with the greatest need, and to identify and plan for the needs of communities that may face challenges in the future. The project will provide SWRCB with needed information on different aspects of the provision of drinking water by water systems: water quality, affordability, and accessibility. The ability to characterize challenges and vulnerabilities that water systems face from the statewide perspective can help to support decision and planning capacity of water policy-makers. This work is also consistent with OEHHA's mission and adopted strategic goals to improve the quality of the public's health and the environment, and to provide quality, useful, and equitable service to the public.

There are numerous ways that issues of water quality, affordability and accessibility can be examined statewide. Among the potential measures for development are:

- Level of compliance with the Safe Drinking Water Act (Maximum Contaminant Level violations) by system.
- Average concentrations of individual contaminants that are monitored in drinking water, especially those with primary and secondary drinking water standards.

- Average water use of water utility per customer.
- Household water costs relative to household income (affordability).
- Total source capacity of the water system per population.
- System-level availability of water (self-reported well closures and water outages).
- System vulnerability (level of reliance on groundwater and purchased water; physical vulnerability of sources to outages).
- Technical, managerial, and financial (TMF) capacity of systems.

Uses for the results of analysis of these measures may include:

- Prioritizing systems or regions for opportunities to consolidate systems that struggle or are vulnerable based on performance (violations or chronically elevated contaminants) and efficiency in TMF capacity, or that are at risk due to supply constraints (dry wells) with other systems in "good health."
- Identifying systems at risk from high costs for control technologies for emerging contaminants (such as hexavalent chromium).

The development and implementation of the CalEnviroScreen tool provides evidence of the Office's ability to look at statewide environmental issues for the purpose of providing information that allows policy makers to prioritize resources. Senate Bill 535 (Chapter 830, Statutes of 2012) requires CalEPA to identify disadvantaged communities for the purpose of investing a minimum fraction of auction proceeds from the state's cap-and-trade program in those communities. To that end, OEHHA's CalEnviroScreen tool combined information from 19 individual statewide indicators which led to the identification of disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria. OEHHA continues to maintain and update that work.

The work to establish water system boundaries in CalEnviroScreen's drinking water indicator provides a strong foundation for informing other questions about drinking water systems based both upon the information it provides about proximity to sources or other systems as well as what can be learned about the populations served by different systems and its relationship to water quality, affordability, and accessibility. It also provides a way to examine drinking water issues regionally or locally. OEHHA expects the near term work to update the drinking water indicator in CalEnviroScreen will focus on the same set of contaminants evaluated in the most recent version of the tool (October 2014). Since this BCP proposes work well beyond that currently envisioned or required for updating CalEnviroScreen, it represents a substantial new activity.

OEHHA will need 1.0 new technical position to implement the development of this new work based on experience with workload measures to develop indicators as part of CalEnviroScreen and the identification of disadvantaged communities. The work involves identifying indicators for the concepts described (water quality, affordability, and accessibility), obtaining and inputting data on the indicators, cleaning and validating the data, statistically and geo-spatially analyzing the indicators, overlaying the analyses for the different indicators, and synthesizing all the information across water systems in California. At the same time, it also requires working closely with SWRCB so that the results meet the needs of relevant programs.

The data that are used to support the measures will change over time, as environmental conditions change (drought, climate change). While this work is being conducted over a limited term, OEHHA intends to provide advice regarding how future updates to the indicators might ensure that the information contained remains timely and how the measures could be used to track performance over time.

E. Outcomes and Accountability

Program staff will establish goals and objectives for implementing the development of a framework and a set of indicators for drinking water quality, affordability, and accessibility in California. These goals and objectives will be reviewed on a regular basis and evaluated to ensure effective program development and implementation.

OEHHA's scientific activities are subject to an internal review and approval procedure, which is also tracked. OEHHA has experience in evaluating and managing scientific information, which will be core functions in establishing and developing the development of drinking water indicators.

Analysis of Problem

The allocated resources will come under the existing controls that are in place for OEHHA. Staff time and work products will be accounted for as part of existing practices. Staff resources and expenditures are tracked by the OEHHA Fiscal Office. Section and Branch level supervisory staff is accountable for work produced by their groups, which is tracked by executive staff and discussed in management meetings.

This work will require collaboration with other state agencies, particularly with SWRCB. Regular cross-department meetings will be held to track and update on the development of the indicators. OEHHA has significant experience with cross-department work, including with SWRCB. Based on consultation with SWRCB, the public will also be able to monitor the development of the indicators and the release of results. Public comment via workshops and review of materials made available on the web are expected to be part of the process of indicator development.

Projected Outcomes

Research Scientist III

Workload Measure	2015/16	2016/17	2017/18
Hold and participate in consultation meetings with SWRCB, as necessary, brief staff on work plan on proposed indicators related to the adequacy of drinking water.	NA	9 meetings	9 meetings
Review existing authorities and literature regarding measuring aspects of the provision of drinking water (quality, affordability, accessibility).	NA	30 government documents and research papers	30 government documents and research papers
Propose preliminary/interim indicators related to the adequacy of drinking water (quality, affordability, and accessibility) for potential development.	NA	6 proposed indicators	6 proposed indicators
Identify, review, and evaluate potential sources of data that may support indicators of drinking water quality, affordability, and accessibility.	NA	6 data source evaluations	6 data source evaluations
Research relevant literature and consult with experts with knowledge of drinking water quality, affordability, and accessibility to determine how they can best be used to characterize each factor.	NA	6 research topics	5 research topics
Acquire data related to drinking water quality, affordability, and accessibility. Critically examine data to establish reliability and amend or remove data that are incorrect, incomplete, improperly formatted, or duplicated. Perform analyses of raw data related to the measures selected for indicators of drinking water adequacy (at least two each related to drinking water quality, affordability, and accessibility).	NA	3 selected indicators	3 selected indicators
Conduct statistical analyses, as necessary, to determine the suitability of data on drinking water adequacy for the establishment of indicators.	NA	5 analyses	4 analyses
Develop, execute, and manage consultation contract(s), as necessary, to support processes related to the development of indicators (e.g., expert consultation, workshop facilitation) and dissemination of results (mapping interface).	NA	2 contracts	2 contracts

Produce report describing the development and adopted metrics for drinking water quality, affordability, and accessibility. Characterize significant data gaps. Produce materials, mapped from geographic information systems analysis both in the report and on line, that provide statewide results for each indicator developed.	NA	1 report	1 report
Make presentations, as necessary, in public forums and to stakeholder groups, as part of the process of establishing indicators on the adequacy of drinking water.	NA	5 presentations	5 presentations

F. Analysis of All Feasible Alternatives

Alternative 1: Approve this BCP and provide OEHHA with $277,000 annually for two years to implement this proposal. OEHHA will develop a framework for SWRCB consisting of a suite of measures related to the adequacy of drinking water in California, acquire and analyze data for a select set of these indicators, and provide results.

Pros:

- The program will provide SWRCB with statewide information that informs water system-level measures related to drinking water quality, affordability, and accessibility. This information will assist the board to prioritizing its allocation of resources to systems, regions, or to targeted initiatives in its role regulating public water systems, consolidating vulnerable systems, and permitting water treatment devices.

Cons:

- This will require an appropriation by reimbursement from the SWRCB.

Alternative 2: Redirect resources from elsewhere in OEHHA to staff activities related to evaluating the adequacy of drinking water.

Pros:

- OEHHA could begin activities to develop a framework to evaluate and track several measures of drinking water quality, accessibility, and affordability without developing a contract with SWRCB through the budget process.

Cons:

- Staff from OEHHA would be redirected from mandated activities, potentially causing programs to fail to comply with other mandates.

Alternative 3: Deny this BCP.

Pros:

- No appropriation would occur, allowing these funds to be spent by SWRCB on existing programs.

Cons:

- California will continue to have no structured indicator framework to guide SWRCB decisions on issues related to the adequacy of drinking water.

G. Implementation Plan

OEHHA will begin the development of the reimbursement contract with SWRCB to be fully executed upon approval of the 2016 Budget Act. Simultaneously, OEHHA will begin the recruitment and hiring process for new staff in early 2016 with an offer of employment upon approval of the budget. This will ensure timely staff support for development of the indicators and framework. The contract OEHHA prepares will include a

timetable and identification of most critical first- and second-year priorities based on consultation with SWRCB.

H. Supplemental Information

This proposal requests $100,000 per year for consulting and professional services to supplement staff work related to collecting and analyzing existing data. This will include consulting with experts at California state universities on topics related to drinking water quality, affordability, and accessibility, as needed. OEHHA also requires additional funds related to consultation on planning public meetings, communicating findings, and supporting the development of a platform to make results from indicator analysis available.

I. Recommendation

Alternative 1. Approve this BCP and provide OEHHA with $277,000 for a two-year limited appropriation to implement this proposal.

BCP Fiscal Detail Sheet

BCP Title: Drinking Water: Statewide Indicators of Quality, Affordability, and Accessibility

DP Name: 3980-004-BCP-DP-2016-GB

Budget Request Summary

	FY16					
	CY	BY	BY+1	BY+2	BY+3	BY+4
Salaries and Wages						
Earnings - Permanent	0	81	81	0	0	0
Total Salaries and Wages	**$0**	**$81**	**$81**	**$0**	**$0**	**$0**
Total Staff Benefits	0	38	38	0	0	0
Total Personal Services	**$0**	**$119**	**$119**	**$0**	**$0**	**$0**
Operating Expenses and Equipment						
5301 - General Expense	0	3	3	0	0	0
5302 - Printing	0	1	1	0	0	0
5304 - Communications	0	1	1	0	0	0
5306 - Postage	0	1	1	0	0	0
5320 - Travel: In-State	0	1	1	0	0	0
5322 - Training	0	1	1	0	0	0
5324 - Facilities Operation	0	10	10	0	0	0
5340 - Consulting and Professional Services -	0	100	100	0	0	0
5346 - Information Technology	0	2	2	0	0	0
539X - Other	0	38	38	0	0	0
Total Operating Expenses and Equipment	**$0**	**$158**	**$158**	**$0**	**$0**	**$0**
Total Budget Request	**$0**	**$277**	**$277**	**$0**	**$0**	**$0**

Fund Summary

Fund Source - State Operations						
0001 - General Fund	0	0	0	0	0	0
0995 - Reimbursements	0	277	277	0	0	0
Total State Operations Expenditures	**$0**	**$277**	**$277**	**$0**	**$0**	**$0**
Total All Funds	**$0**	**$277**	**$277**	**$0**	**$0**	**$0**

Program Summary

Program Funding						
3730 - Health Risk Assessment	0	277	277	0	0	0
Total All Programs	**$0**	**$277**	**$277**	**$0**	**$0**	**$0**